

Amendments to the Claims:

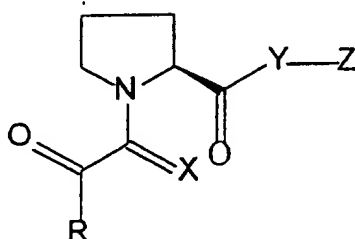
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-24. (Canceled).

25. (Currently amended) A pharmaceutical composition comprising:

(i) an amount ranging from 0.1 mg to 10,000 mg of a first hair revitalizing compound of formula I:



or a pharmaceutically acceptable salt or hydrate thereof, wherein

R is selected from the group consisting of a C₁-C₉ straight or branched chain alkyl or C₂-C₉ straight or branched chain alkenyl, C₃ or C₅ cycloalkyl, C₅-C₇ cycloalkenyl, and Ar₁,

wherein said alkyl or alkenyl is optionally substituted with C₃-C₈ cycloalkyl, C₁-C₄ alkyl, C₂-C₄ alkenyl, or hydroxy,
wherein said cycloalkyl or cycloalkenyl is optionally substituted with C₁-C₄ alkyl, C₂-C₄ alkenyl, or hydroxy,

Ar₁ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl,

wherein said Ar₁ has one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, C₁-C₆ straight or branched alkyl or C₂-C₆ straight or branched alkenyl, C₁-C₄ alkoxy or C₂-C₄ alkenyloxy, phenoxy, benzyloxy, and amino;

X is selected from the group consisting of oxygen, sulfur, methylene, and H₂;

Y is selected from the group consisting of oxygen and NR₂, where R₂ is hydrogen or C₁-C₆ alkyl; and

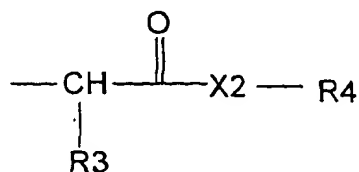
Z is selected from the group consisting of C₂-C₆ straight or branched chain alkyl or C₂-C₆ straight or branched chain alkenyl, and Ar₂,

wherein the C₂-C₆ straight or branched alkyl is substituted in one or more positions with Ar₁ as defined above, C₃-C₈ cycloalkyl, or cycloalkyl connected by a C₁-C₆ alkyl or C₂-C₆ alkenyl;

Ar₂ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl,

wherein said Ar₂ has one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, C₁-C₆ straight or branched alkyl or C₂-C₆ straight or branched alkenyl, C₁-C₄ alkoxy or C₂-C₄ alkenyloxy, phenoxy, benzyloxy, and amino;

or Z is a fragment having the following formula:



wherein

R_3 is a C_1 - C_9 straight or branched alkyl or unsubstituted Ar_1 ,
wherein said C_1 - C_9 straight or branched alkyl is optionally substituted with
 C_3 - C_8 cycloalkyl or Ar_1 as defined above;

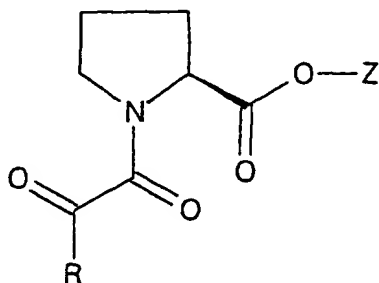
X_2 is O or NR_5 , where R_5 is selected from the group consisting of
hydrogen, C_1 - C_6 straight or branched alkyl, and C_2 - C_6 straight or branched
alkenyl; and

R_4 is selected from the group consisting of phenyl, benzyl, C_1 - C_5 straight
or branched alkyl or C_2 - C_5 straight or branched alkenyl, and C_1 - C_5 straight or
branched alkyl or C_2 - C_5 straight or branched alkenyl substituted with phenyl;

(ii) a second hair revitalizing compound; and

(iii) a pharmaceutically acceptable carrier.

26. (Previously presented) The pharmaceutical composition of claim 25
wherein the compound is of formula II:



II

or a pharmaceutically acceptable salt or hydrate thereof, wherein

R is a C_1 - C_9 straight or branched chain alkyl or C_2 - C_9 straight or branched chain
alkenyl C_3 or C_5 cycloalkyl, C_5 - C_7 cycloalkenyl, or Ar_1 ,

wherein said C_1 - C_9 straight or branched chain alkyl or C_2 - C_9
straight or branched chain alkenyl is optionally substituted with C_3 - C_8
cycloalkyl, C_1 - C_4 alkyl, C_2 - C_4 alkenyl, or hydroxy,

wherein said cycloalkyl or cycloalkenyl is optionally substituted with C₁-C₄ alkyl, C₂-C₄ alkenyl, or hydroxy;

Ar₁ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl,

wherein said Ar₁ has one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, C₁-C₆ straight or branched alkyl or C₂-C₆ straight or branched alkenyl, C₁-C₄ alkoxy or C₂-C₄ alkenyloxy, phenoxy, benzyloxy, and amino;

Z is a C₂-C₆ straight or branched chain alkyl or C₂-C₆ straight or branched chain alkenyl, C₃-C₈ cycloalkyl, cycloalkyl connected by a C₁-C₆ alkyl or C₂-C₆ alkenyl, or Ar₂,

wherein said C₂-C₆ straight or branched alkyl chain is substituted in one or more positions with Ar₁,

Ar₂ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl,

wherein said Ar₂ has one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, C₁-C₆ straight or branched alkyl or C₂-C₆ straight or branched alkenyl, C₁-C₄ alkoxy or C₂-C₄ alkenyloxy, phenoxy, benzyloxy, and amino.

27. (Previously presented) The pharmaceutical composition of claim 25 wherein the compound is selected from the group consisting of:

3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-prop-2-(E)-enyl (2S)-1-(3,3,-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-propyl (2S)-1-(3,3, dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

(1R)-1,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-furanyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thienyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thiazolyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2, phenyl)ethyl-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

2-(3,4,5-trimethoxyphenyl)-1-ethyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2-Pyridyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-

pyrrolidinecarboxylate,

3-(4-Pyridyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-

pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-

pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-

pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-

pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-

pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-N-([2-thienyl]glyoxyl) pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxobutyl)-2-

pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-cyclohexylglyoxyl-2-pyrrolidinecarboxylate, and

3,3-Diphenyl-1-propyl (2S)-1-(2-thienyl)glyoxyl-2-pyrrolidinecarboxylate,

or a pharmaceutically acceptable salt, hydrate, or mixture thereof.

28. (Withdrawn) A method of promoting hair germination comprising administering to an animal in need thereof a pharmaceutical composition of claim 25.

29. (Withdrawn) A method of promoting hair germination comprising administering to an animal in need thereof a pharmaceutical composition of claim 26.

30. (Withdrawn) A method of promoting hair germination comprising administering to an animal in need thereof a pharmaceutical composition of claim 27.

31. (Withdrawn) A method of preventing hair loss comprising administering to an animal in need thereof a pharmaceutical composition of claim 25.

32. (Withdrawn) A method of preventing hair loss comprising administering to an animal in need thereof a pharmaceutical composition of claim 26.

33. (Withdrawn) A method of preventing hair loss comprising administering to an animal in need thereof a pharmaceutical composition of claim 27.

34. (Withdrawn) A method of treating alopecia comprising administering to an animal in need thereof a pharmaceutical composition of claim 25.

35. (Withdrawn) A method of treating alopecia comprising administering to an animal in need thereof a pharmaceutical composition of claim 26.

36. (Withdrawn) A method of treating alopecia comprising administering to an animal in need thereof a pharmaceutical composition of claim 27.

37. (Withdrawn) A method of treating hair loss comprising administering to an animal in need thereof a pharmaceutical composition of claim 25.

38. (Withdrawn) A method of treating hair loss comprising administering to an animal in need thereof a pharmaceutical composition of claim 26.

39. (Withdrawn) A method of treating hair loss comprising administering to an animal in need thereof a pharmaceutical composition of claim 27.

40. (Withdrawn) A method of treating hair loss associated with cancer therapy, wherein the cancer therapy is selected from the group consisting of radiation and chemotherapy, comprising administering to an animal in need thereof a pharmaceutical composition of claim 25.

41. (Withdrawn) A method of treating hair loss associated with cancer therapy, wherein the cancer therapy is selected from the group consisting of radiation and chemotherapy, comprising administering to an animal in need thereof a pharmaceutical composition of claim 26.

42. (Withdrawn) A method of treating hair loss associated with cancer therapy, wherein the cancer therapy is selected from the group consisting of radiation and chemotherapy, comprising administering to an animal in need thereof a pharmaceutical composition of claim 27.